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CONFIDENTIAL

REPORT

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COUNTRY USSR

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SUBJECT The Yuzhnaya Coal Mine

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THIS IS UNEVALUATED INFORMATION

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ORGANIZATION

1. The Yuzhnaya Mine was located approximately five kilometers west of the center of the town, Shakhty (N 57-46, E 40-127, Rostov Oblast. (See Annex A). In the immediate vicinity of Shakhty there were approximately 20 coal mines names of the following: 25X1 Nezhdannaya, Shakhta Imeni Frunze, Petrovskaya Shakhta, Komsomol'skaya Pravda, Shakhta No. 46, Shakhta Oktyabr'skaya, Shakhta Artem 2 Glubokiy, Shakhta Krasina, Shakhta Vorovskaya. All of the mines belonged to the Shakhtantratsit Trust which was a part of the Rostovugol' Coal Combine. All the mines were anthracite mines.

2. According to rumor, construction of the Yuzhnaya Mine began in 1940, was interrupted by World War II, but was resumed in 1946. The mine, 25X1 opened in late 1950, began production in December of that year. Construction costs, I was told, amounted to 60,000,000 rubles. In 1951 the daily output of coal at the mine amounted to 1,700 tons. it was supposed to have been completed in several years with a scheduled production of 25X1 5,000 tons. It was said that, after expansion, the mine could be fully exploited for 70 years.

3. In 1951 there were approximately 600 miners and employees in the Yuzhnaya Mine who worked 24 hours a day in three eight-hour shifts. Leading personnel of the mine were:

   a. Director of the mine: Mining Engineer Director, 2nd Class, VOBLA.

   b. Chief Engineer: Mining Engineer KOLESNIKOV.

   c. Three engineers (one per shift): Names unknown.

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d. Party Organizer (Partorg): Name unknown.

e. Deputy Director for Technical Matters: Name unknown.

f. Deputy Director for Electrification: Name unknown.

4. The administration of the mine was organized as follows:

a. Personnel Section (Otdel kadrov)

b. Engineering Section (Inzhenernyy otdel)

c. Technical Equipment Section (Otdel oborudovaniya)

d. Mine Surveying Section (Marksheyderskiy otdel)

e. Work Registry Section (Otdel ucheta spuska)

f. Finance Office (Kassir)

g. Accounting Office (Bukhgalteriya)

h. Mine Trade Union Section (Profsoyuznaya organizatsiya gornyakov)

i. Transformer Room (Podstantsiya)

j. Battery and Lamp Room (Lampovyy otdel)

k. Coal Washing and Grading Shop (Otdel fabriki)

l. Mechanical Repair Shops (Masterskaya po remontu oborudovaniya)

m. Mine Guard Detail (Sluzhba po okhrane shakhty)

5. Personnel Section. The personnel section had seven employees. The section maintained a file on all employees and handled all personnel matters. It was mandatory that prospective employees present the following documents to the personnel section:

a. Reference from last employer.

b. Passport with entry of the last place of employment, reasons for leaving, and date of discharge.

c. Application for employment at the mine.

d. Voyenkomat's registration certificate.

e. Certificate of family status.

f. Trade union membership card.

The application for employment was addressed to the director of the mine who referred it to a section chief in need of employees. The section chief made his endorsement on the application and returned it to the director's office at which time, if the endorsement was positive, the director made final decision as to employment with an appropriate endorsement. The application was then forwarded to the personnel section which processed the new employee in the following way:

a. Prepared a card for employee's personnel file.

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b. Retained employee's passport, reference, and certificate of family status for the file.

c. Informed the appropriate voyenkomat of action taken on the applicant for the purpose of exemption in case of mobilization or war, or at least for his reclassification for military service.

d. Registered employee as to his place of residence.

e. Advised employee to obtain membership in the mine's trade union.

6. After processing, the new employee was handed a registration sheet (obkhodnyy list) on which were listed all offices and individuals to whom he must report prior to being placed on the payroll. Those visited knew from the sheet that the individual had been employed by the mine and made appropriate entries in their files. The following sections were listed on the registration sheet:

a. Director's office.

b. Chief Engineer

c. Section Chief (nachal'nik uchastka)

d. Accounting Office

e. Savings and Loan Section (ssuda)

f. Billeting Section

g. Library

h. Party Organizer

i. Trade Union Representative

j. Indoctrination Center (kursovaya set')

k. Fire Section (The new employee was briefed on fire-fighting regulations and fire prevention rules.)

l. Supply Room (Work clothes, rubber shoes, helmets were issued to the miner in this room.)

m. Work Registry Section (Two tags, one for checking time of entry and the other for time of exit, were issued here.)

n. Battery and Lamp Room (A miner's lamp was issued to the new miner here.)

o. Personnel Section. This was the last entry on the registration sheet. From here all newly employed miners were sent to attend the indoctrination course, the first day of which the miner was automatically placed on the payroll. The course, which lasted 10 days, offered lectures on the following subjects: layout of the mine and characteristics; composition and thickness of the coal beds; underground communications net; method of mining; method of timbering; machinery; electrification system of the mine; ventilation system. Special attention was given to safety instructions and to the new miner's specific job. During the 10 days' course each miner was required to make at least two trips underground and to familiarize himself with the layout of the mine, communications, and mining methods. After completion of the indoctrination course, the new employee was considered ready for work underground and was sent to the place where he was to work.

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6. Engineering Section. The head of this section was the Chief Engineer under whom there were three engineers (one per shift) and several technicians. The section, which was responsible for the proper operation of the mine, issued all instructions and directives on technical matters and was further responsible for work safety and the organization of a work-safety service.

7. Technical Equipment Section. Several engineers and technicians were employed in this section. The section was responsible for the proper utilization of machinery, maintenance, and repair, as well as for requesting new machinery and technical equipment. 25X1 requests for new machinery and technical equipment were sent to the Shakhtantratsit Trust and from there to the Rostovugol' Combine.

8. Mine Surveying Section. There were approximately 10 employees in this section which was responsible for the geological exploration of the mine. Small-scale surveying was done in the section and all plans, blueprints, etc. were made there. The section issued instructions as to direction, layout, and extension of new entries in the mine, and on the best methods of coal mining based on results of geological exploration. The section chief was called the Chief Surveyor (Glavmarksheyder).

9. Work Registry Section. Three workers were employed in this section, a room where the miners' tags were kept. Upon entering the mine, the miner received two tags; one tag indicated, daily, the time work began, the other the time work ended. The entry tag was dropped into a special box placed at the elevator door. The exit tag was presented, in person, at the counter in the Work Registry Section upon leaving the mine.

10. Finance Office. The Chief Cashier (glavnyy kassir) was in charge of this office; there were seven cashiers subordinate to the chief. Employee wage accounts were kept in this office which utilized the data collected by the Work Registry Section. Wages were paid on the following basis: On the 25th of the month each miner was given an advance of approximately 15 percent of his average monthly wage; the remainder was paid about the 10th of the next month for work for the past calendar month.

a. The average monthly wages (in rubles) of administrative personnel in the Yuzhnaya Mine were:

Director	5,000
Chief Engineer	4,500
Section Chief	3,500
Shift Engineer	2,200
Deputy Section Chief	1,750
Deputy Organizer	1,550
Chief Accountant	1,500
Foreman (Desyatnik ili gornyy master)	1,200
Chief Surveyor	950
Chief Billeting Section	950
Trade Union President	950

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Instructor of indoctrination course	750
Mine Commandant (equivalent to administrative officer)	650
Bookkeeper	550
Clerical employee	450-650
Surveyor	450
Billeting office employee	350-550

b. The worker's average monthly wages in the Yuzhnaya Mine were:

Coal driller (buril'shchik po uglyu)	Up to 3,500
Coal-cutter operator and assistant operator (vrubmashinist i yego pomoshchnik)	2,500-3,000
Prop removers (posadchik)	2,500-3,000
Timberman (krepil'shchik)	2,000-2,500
Coal loader (navalootboyshchik)	1,800-3,500
Entry driver (prokhodchik)	1,300-2,000
Clogger (butchik)	1,200-2,000
Rock driller (buril'shchik po porode)	1,200-1,800
Transformer room mechanic (mekhanik podstantsii)	1,500
Lift operator (mashinist pod'yemnoy mashiny)	900-1,500
Emergency mechanical repairman (slesar' avariynoy brigady)	900-1,300
Prop-transport worker (lesogon)	900-1,300
Electric locomotive operator (elektromashinist)	900-1,300
Blower (zapal'shchik)	850-1,200
Chute transporter (perenoschik reshtakov)	900-1,200
Repair man for electrical equipment (elektroslesar')	800-1,200
Train conductor and switchman (konduktor)	800-1,100
Electrical repair man for transformer room (podstantsionnyy elektroslesar')	950
Foreman of mechanical repair shop (zaveduyushchiy masterskoy)	900
Repair man for coal grading and washing shop (slesar' fabriki)	750-1,100
Underground railroad repair man (putevoy)	750- 950
Conveyer motor operator (motoristka)	750- 950

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Hatchway operator (lyukovaya)	750- 900
Shift operator for the transformer room (dezhurnyy podstantsionnyy rabotnik)	750- 900
Stoker (kochegar kotel'noy)	750- 900
Tipper operator (oprokidchitsa)	650- 850
Assistant to elevator operator (stvolovaya)	550-1,000
Lumberyard carpenter (plotniki na lesosklade)	750- 800
Lathe operator (tokar')	500- 600
Marker on the tipper (uchetchitsa oprokida)	450- 900
Mine's guard (okhrana shakhty)	550
Coal cleaner (vyborshchitsa porody)	475
Gang rider (otkatchitsa)	450- 600
Section clerk (naryadchitsa uchastka)	450
Lamp worker (lampovshchitsa)	350- 500
Switchboard operator (dezhurnaya na komutatore)	350
Shower room operator (ban'shchitsa)	350
Cleaning woman (uborshchitsa)	350

11. Accounting Office. Approximately 50 employees worked in the Accounting Office which was responsible for the mine's accounts. Registration of the work hours of each individual was made here and a record was also kept of the work performed.

12. Trade Union Section. Membership in the trade union was not obligatory. However, because of constant disagreement between individual miners and the mine administration, particularly with respect to wages, it was advisable to join the trade union to protect one's interests. It was particularly beneficial in times of accident or sickness when the union, which always backed its members, negotiated with the mine administrators for payment of disability benefits. Although legally there was no distinction between disabled miners who belonged to the union and those who did not, in practice the procedure was too complicated for the miner to obtain benefits without support. 25X1

Trade union dues were scaled to the miners' wages and were from two to five rubles, or more, a month. 25X1

13. Transformer Room. Several transformers and current distribution boards were located in this room. 25X1

The Yuzhnaya Mine received electric current from the Artemgres Power Plant which was located five to seven kilometers from Shakhty.

14. Battery and Lamp Room. Approximately 15 men worked in this room where batteries and flashlights for miners were kept. Upon entering the

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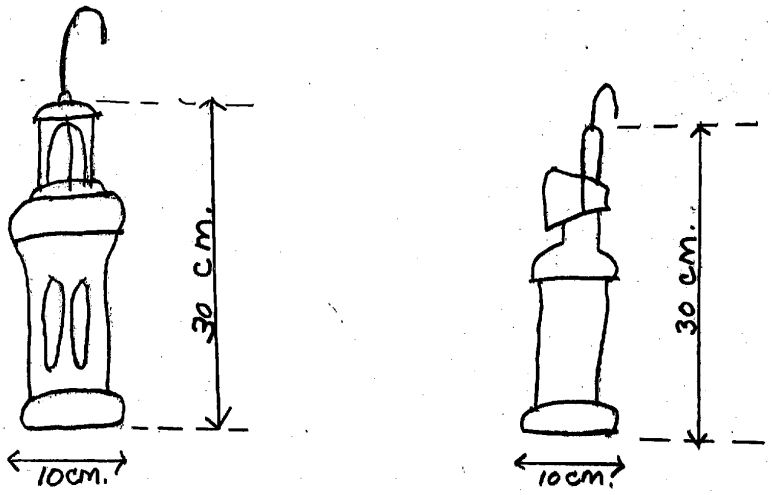
mine each miner reported to this room where he received a 2½-volt battery flashlight of one of the types presented below.



This room was equipped with low current transformers for charging batteries; a battery lasted eight hours. Some lamps used were gasoline lamps.

15. Coal Washing and Grading Room. Coal was mined at Yuzhnaya in various size lumps; a large quantity was received as coal dust. The coal, which was always mixed with rock, was separated from the rocks, graded, and washed in a shop called fabrika. /See Annex B./ The coal was hoisted from the mine, by elevator, to a conveyer on the fifth floor of fabrika. On every shift, there were approximately 35 girls working here separating the rocks and stones from the coal as it moved on the conveyer line. Lumps rejected were placed in special containers which were eventually shot down through special hoppers (chutes), loaded on cars, and taken from the mine grounds. The clean coal was directed to a series of shaking sieves located on the second, third, and fourth floors where it was graded, in groups, according to the size of the lumps. Lumps of 30 to 35 cm. in diameter and larger usually remained on the last sieve. Upon completion of grading, the coal was directed to the coal bath where it was washed in several large basins with water, at high pressure, from special hose. From here the coal was taken, by conveyer, to the drying room where it was dried by hot air while being conveyed. The coal was stored in bunkers, to which it had been taken by conveyer, until shipment.

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16. Repair Shops. /Annex B./ Repair shops consisted of:

a. Forge: Welding and similar work required for repairing equipment was done in the forge; three to five workers were employed here.

b. Lathe Shop: This shop was equipped with one lathe, DIP-200 type; one old lathe; three new drilling machines; and one new planing machine. Repair and maintenance of mining machinery was done here

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by approximately six workers each shift. 25X1

c. Electrical Equipment Repair Shop.

d. Spare Parts Room.

e. Supply Room (work clothes, etc.)

17. Guard Detail. A detail of approximately 10 guards was maintained at the mine. There was a sentry box at the main entrance where a guard was on duty 24 hours a day. The grounds were surrounded on the north, south, and east sides by a barbed wire fence two meters high; on the west side there was a railroad line.

COAL PRODUCTION

18. The coal bed in the Yuzhnaya Mine was from 1.5 to 1.8 m. thick. It ran in a north-south direction at a 38° angle from the horizontal. /See Annex C./ The bed was under exploitation in 1951. There were rumors that there were other coal beds in the mine, either below or above [redacted] if 25X1 there were, they were not being exploited in 1951 and that preparations for exploitation were not being made. In 1951 mining was done at the Yuzhnaya Mine from 105 to 280 m. underground /See Annex C./ [redacted] 25X1 no coal was mined except that in the bed described above. The Yuzhnaya Mine was divided into six sections (uchastok). Sections 1, 2, 3, and 4 were Coal Mining Sections (ugol'nyy uchastok). Sections 5 and 6 were auxiliary sections (podsobnyy ili vspomogatel'nyy uchastok). Section 5, responsible for driving new entries, expansion of the mine, and for repair and maintenance of working entries, was called the Entry Opening Section (Uchastok kapital'nogo remonta -- OKR). Section 6, responsible for the administration and operation of electric railroads, was called the Underground Transportation Section.

19. Sections 1 and 4 were located in the western wing of the mine; Sections 2 and 3 in the eastern. /See Annex D./

a. Section 1 was composed of two coal faces (lava): the first and third face.

b. Section 4 had one face, the first bis (pervayalava bis). This face began approximately 600 m. west of the beginning of the first face. (The first face began approximately 500 m. from the main shaft.)

c. Section 2 had two coal faces: the second and fourth faces.

d. Section 3 had one coal face: the second bis (vtorayalava bis). [redacted] 25X1 the distances there were similar to those mentioned /Paragraph b, above./. All faces in the mine were 120 m. long.

20. The mine was provided with two shafts (stvol); one, called skipovoy stvol, was used for hoisting coal; the other, called a cage shaft (kletʹyevoy stvol), was used for miners and for cars loaded with rock. The two shafts were equipped with elevators. All machinery and equipment in the mine [redacted] were of Soviet make. 25X1

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21. The mine had the following entries underground /See Annex D/ :

a. Main Entry. This entry, eight meters wide and three meters high, was provided with a double-track rail line .90 m. wide. The sections where the main entry merged with the miners' entry had single track. A tipper (oprokid) was located opposite the entry at the 105 horizontal. The tipper, a metal drum two by three meters, had an opening for the entrance of loaded cars (capacity 1½ tn.). Inside the car was tipped electrically (by a push button) and the coal was dumped into one of two hoppers which were under the tipper. Two electrically operated skip hoists hauled the coal from the hoppers to the surface.

b. Miners' Entry (lyudskoy shtrek). The miners' entry was provided with a double-track rail line of .90 m. gauge. The entry was six meters wide and three meters high.

c. Entry at the 105 horizontal (shtrek stopyatogo gorizonta). This entry, six meters wide and three meters high, was provided with a double-track line of .90 m. gauge. At the highest point of the entry there was a pit (shurf) approximately two meters in diameter through which, by means of an electrically operated bucket (diameter 1½ m.), props and lumber were delivered to the mine.

d. Entry 105 (stopyatyyshtrek). This entry was equipped with a single track of .90 m. gauge. Size of the entry was 4 by 2.8 m.

Entries /c and d/ were used for miners' communications, removal of rock, and delivery of lumber. Electric locomotives (1½ tns.) which could pull four loaded cars operated in these entries. /See Annex K./ Six 10-ton electric locomotives each of which could pull 35 loaded cars operated in entries /a and b./

e. First and second subentries. (pervyy i vtoroy promezhutochnyy shtrek). These subentries, 4 x 2½ m., were provided, in the far sections with single rail track lines of .90 m. gauge. Subentries were used for the removal of rock. Cars were moved by hand to special chutes through which rocks were dumped into the main entry, loaded on cars, and taken to the hoisting cage located in the center of the miners' entry. The hoisting cage could carry either one 1½-ton car or 15 miners. (The same cage was used for lumber, machinery, etc.) The remaining part of the first and second subentries contained scraper-conveyers and conveyer belts.

22. Coal Sections 1, 2, 3, and 4 were organized as follows:

a. Personnel in charge:

(1) One mining technician, section chief.

(2) Three mining technicians, assistant section chiefs (one per shift).

(3) Three foremen (desyatnik) (one per shift).

b. Workers: 125 to 150 workers were assigned to each coal section, as follows:

(1) Two gangs of coal loaders (navalootboyshchik) each composed of 10-12 men.

(2) One gang of three to four prop removers (posadchik).

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(3) One gang of eight to nine timber workers (krepil'shchik).

(4) One gang of six to seven rubble fillers (butchik).

(5) One gang of five to six chute setters (reshtachnik).

(6) One gang of four to five lumber transporters (lesogon).

(7) One coal-cutting crew: one coal cutter operator, one assistant, and one winch operator.

(8) Two gangs of five to six girls, hatchway operators (lyukovaya).

(9) Two girls, operators for conveyor motors (moto .

(10) Three electricians.

(11) Three hole men (zapal'shchik).

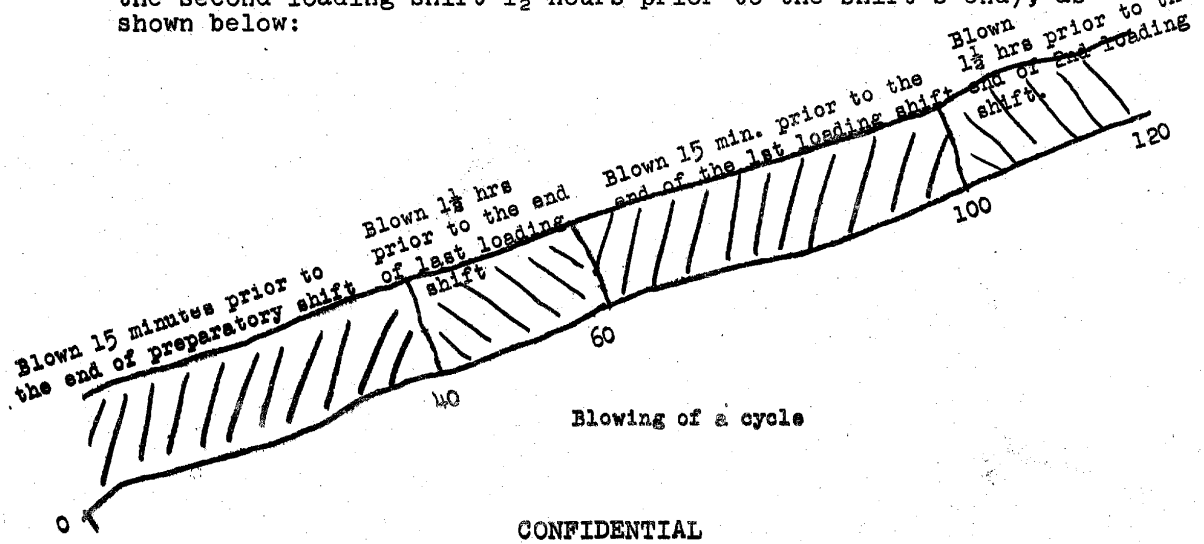
(12) Two coal drillers (buril'shchik po uglyu).

(13) One gang of four to five rock drillers (buril'shchik po porode).

(14) One gang of two to three entry drivers (prokhodchik).

23. All sections of the mine were operated on a 24-hour basis. There were three eight-hour shifts: from 0800 to 1600 hours, from 1600 to 2400 hours, and from 2400 to 0800 hours. In the coal sections one shift was called the preparatory shift (podgotovitel'naya), the other two loading shifts (krutel'naya). [The meaning and origin of this Russian term could not be explained by DS-563.] When necessary, all workers on the loading shifts could be shifted to the preparatory shift.

24. It was the task of the preparatory shift to make ready a sufficient amount of coal for the work of the other two shifts. A 1½-m. cut was made on a 120-m. stretch of coal face (cycle), the coal room was timbered, and blasting was done. Blasting the first 40 m. of the cycle always took place during the last 15 minutes of this shift. The coal cutter was not moved from the room during blasting but was hooked to its winch. Subsequent blasting was done in the following sections: from the 40th to the 60th m. (by the hole man of the first loading shift 1½ hours prior to the end of the shift); from the 60th to the 100th m. (by the same man 15 minutes before the end of the shift); from the 100th to the 120th m. (by the hole man of the second loading shift 1½ hours prior to the shift's end), as shown below:



Blowing of a cycle

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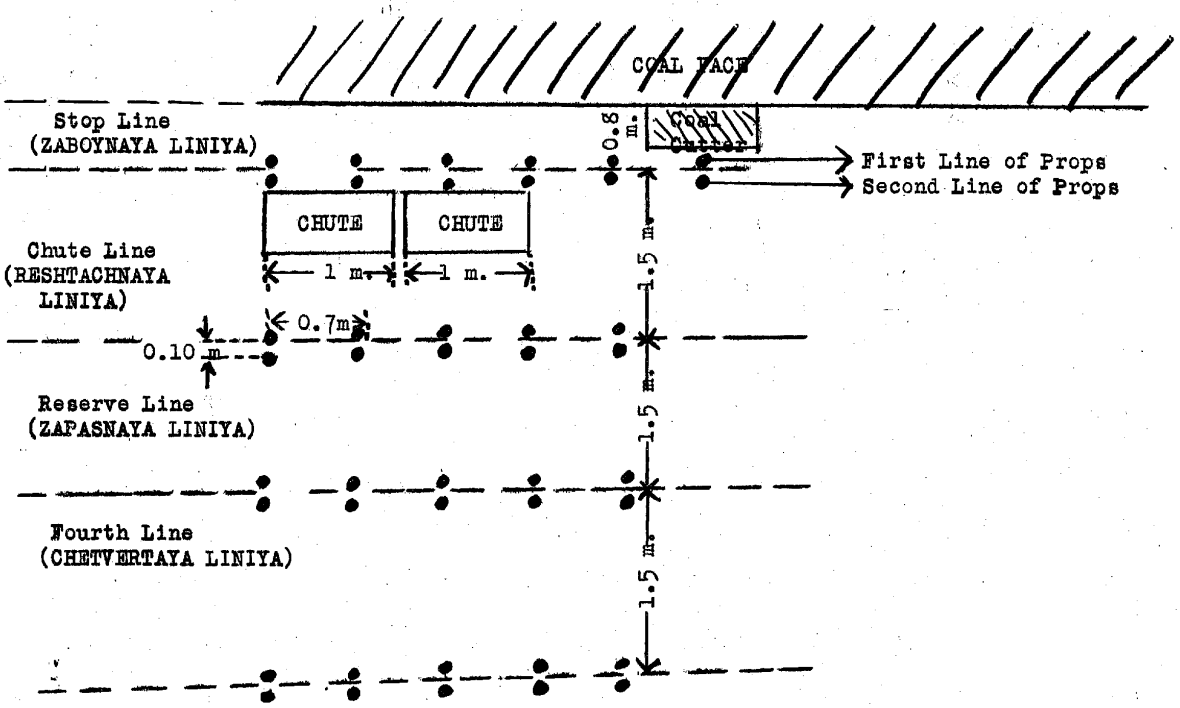
25. The preparatory shift was composed of the following gangs: a timber gang, rock-drilling gang, prop-moving gang, chute-setting gang, coal-cutting gang, and a lumber-transport gang, in addition to one hole man, one electrician, and one coal driller. These gangs worked in the following way:

a. The timber gang placed the second line of props (vtoraya nitka organki) five to seven centimeters from the first line of props (pervaya nitka organki), as shown below.



As soon as 15 to 20 m. of the second line were completed, the hole man was permitted to start cutting.

b. Chute-setting gang. When the timber gang had placed 5 to 10 meters of the second line of props, the chute-setting gang began replacing chutes close to the second line of props. The chutes were fastened to the props, particularly the first few placed at the foot of the mound. There was no delay in replacing chutes since this work was done more rapidly than the cutter moved up. The chutes used in the Yuzhnaya Mine were one meter long, eight meters wide, and five meters high. Every fourth chute had a side opening of 50 x 40 cm. through which coal was pushed into the chutes. /See Annex E./

c. Coal-cutting gang. The coal face was always cut in an up-hill direction. The cutter (vrubmashina MD-5?) /See Annex J/ was provided with a motor the speed of which could be regulated.

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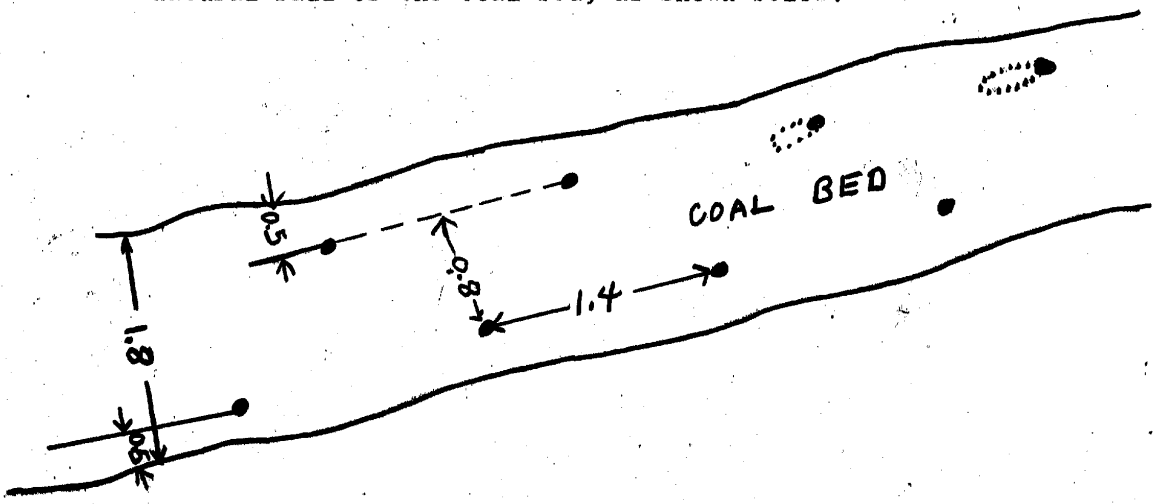
It also had a winch /see Annex M/ to which the cutter was tied. The face was cut approximately 10 cm. above the floor of the entry, or as low as possible. The cutter bar was 1½ m. long, 25X1

experiments were made with two 1.75 m. bars but the pressure resulting from such deep cuts was too great for the props to stand. In this way a coal face of 120 m. could be cut in six hours. Usually, after 15 m. had been cut, there was a break of 10 to 15 minutes 25X1 when the towing rope was replaced. Inspection of bits was made when the shift ended at which time some bits were replaced

d. Coal-drilling gang. When the cutter had advanced 20 m., the driller assigned to the preparatory shift began drillings for explosive charges. 25X1 Drillings were made in two rows: the first row was made five meters above the ground, the second three meters. Drillings in the two rows were always interspaced at 1.4-m. intervals; depth of the shafts was 1.5 m. The upper row of shafts was always made at a 15° angle toward the side of the natural fall of the coal bed, as shown below.



Six hundred grams (three 200 gram fillings) of ammonite were provided for each shaft. Drilling was first done with a seven-meter drill (zaburok) and then with a 1.5-m. drill referred to as bur or shtanga. Eight or nine minutes were required for a depth of 1½ m. A pobedit drilling head could make approximately 20 shafts without replacement. The electric borer, referred to as baranchik (battering ram) /see Annex F/, used for this 25X1 purpose weighed approximately 20 kg. and was operated by one man.

e. Lumber-transporting gang. Lumber and props for Coal Faces 3 and 4 were brought to the mine through the pit located at the most elevated point of the 105th entry. Here they were loaded on flat cars pulled by a 1½-ton trolley locomotive through the 105th entry to the crosscuts called pechka. Five loaded flat cars could be pulled by this locomotive. The lumber was unloaded at the crosscuts and pushed to the third subentry where it rolled because of the natural fall of the crosscut. Lumber for Coal Face 2 and the second bis and for Coal Face 1 and the first bis was taken to the cage shaft (klet'evoy) where it was loaded on

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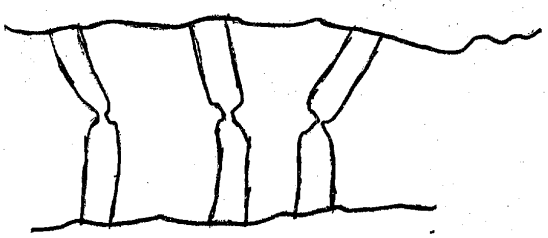
flat cars and pulled by a 10-ton trolley locomotive to the appropriate miners' passage (lyudskoy khodok). Here it was unloaded and pulled by electrically-operated winches to the second subentry from where it was taken manually, or by transporters which were put into reverse gear for this purpose, up to the working coal face. If taken manually, the transporting equipment blocking the way was dismantled. Depending on the coal face mined, the lumber transporting gang took over the lumber and props at pechka (for Faces 3 and 4) or at the intersections of the second subentry (for Face 2 and the second bis and for Face 1 and the first bis), and lowered it to the working chamber. One hundred eighty props were needed for the construction of one support line with an additional 60 half-props (raspilok) for upper beams. /See Annex G./

f. Drilling gang. In preparation for blasting this gang drilled shafts in the rock ceiling of the coal chamber on the side opposite the coal face. Blasting was done for two purposes: to reduce pressure by removing a layer of rock from the ceiling and, secondly, to obtain material for building butts (buty). Butts were made to serve as supporting walls for vault-like openings caused by blasting. Usually the space between butts was 10 m. (a butt was approximately eight meters wide) and four 1.5-m. holes were made by the drillers in each area between butts. Drilling was done with a core drill (kolonkovaya mashina) which I am unable to describe. Drills of 3, 5, 7, 1.2, and 1.5 m. were used here in succession. At least 20 minutes were needed to drill a hole of 1.5 m.

g. Prop-moving gang. When drilling between the butts was completed, this gang began to cut the props located between the butts, thus preparing the areas for clogging. The props were cut with axes until they bent under pressure, as shown below.



h. The electrician attached to the shift had the task of laying a cable for 12-volt current between the chute and the reserve lines. This was the line which had been taken from the props located between the reserve line and the fourth line and which was now used by the miners to plug in their bulbs, provided with cord, after the outlets were made. These lights were used for light in the coal room; the lamps described above were used in transit to the working area and in emergencies. The machinery (coal cutters, conveyers, core drilling machines, rock-loading machines, tipper, and locomotives) operated on a 380-volt current. The battering ram operated on approximately 220 volts. Each coal face was equipped with two transformers to reduce the 380 volts to 220 and to 12.

i. During the shift the hole man placed explosive charges and made connections in order to blow the first 40 m. of the new coal face and, simultaneously, the rocks located opposite this coal

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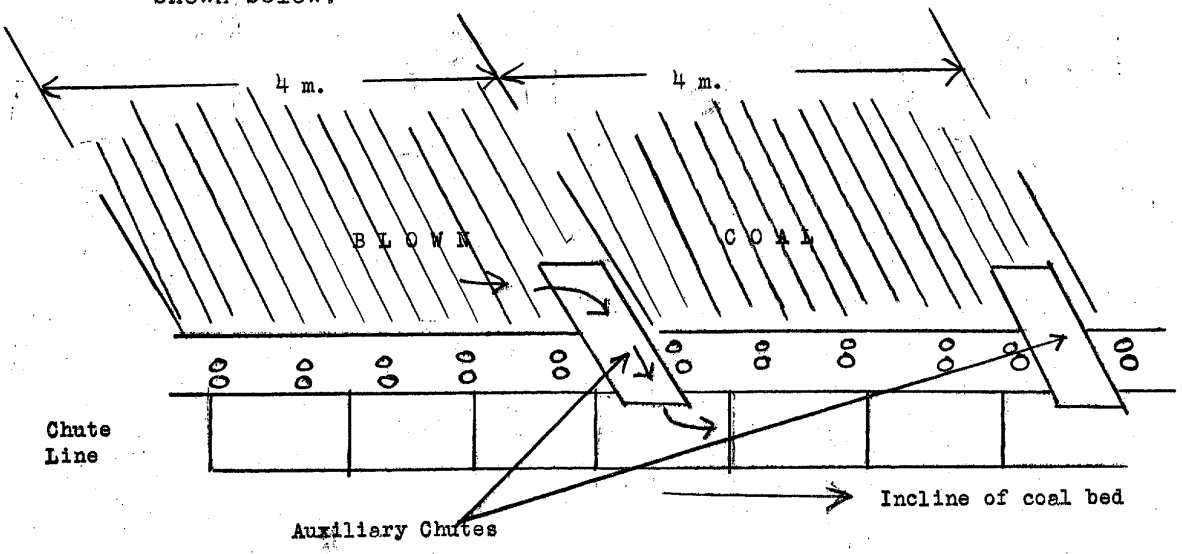
section in the last 15 minutes of the shift. Usually this was a section made up of three butts and the two areas between. The Bickford fuse, approximately 1.7 m. for each hole, was used for blowing. Each hole was blown separately at two or three-second intervals.

26. The 1st and 2nd Loading Shifts. Working on each shift were: one gang of coal loaders of 10 or 12 men; five or six women working as hatchway operators; two women conveyer motor operators; one gang of rubble fillers of six or seven men; one or two entry drivers; two lumber transporters; one hole man; one electrician. The function of the loading shifts was the removal of coal cut by the cutter during the preparatory shift. The work performed by the shifts is described below.

a. Coal loaders. Upon entering the coal room, the loaders divided the 40-m. blown face into four-meter sections for each man, as shown below.



Each four-meter section yielded approximately 3.2 to 3.3 tons of coal which had to be removed by a loader in eight hours. Loading was done with spades; the auxiliary chutes (poperechnyy reshtak) were also used.

b. From the chutes the coal went to the conveyer line. That part of the line close to the working area was a scraper type [see Annex H]; farther down the line was a belt type. From the conveyer the coal went to the hatchway (skat). The hatchway was opened and closed by a metal hatch [see Annex N] on the lower part which made it possible to regulate the flow of coal to the entry where it was loaded into cars pulled by a trolley locomotive. The hatchway operators regulated the opening and closing of the hatches. They were further responsible for moving the cars, for filling them with coal which streamed through the hatchway, and for linking the loaded cars together. They then

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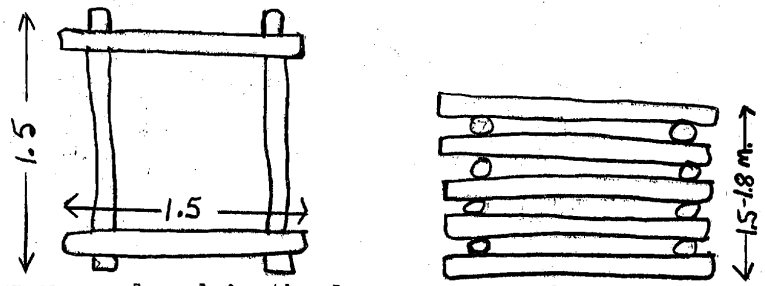
counted the cars, marked them with the number of the coal face, and numbered the cars consecutively.

c. Conveyer-motor operators. These operators supervised work done on conveyer motors, lubricated and kept them running. Normally, the conveyer motor ran without interruption for two shifts, that is, for 16 hours. They stopped for short intervals during the blasting periods.

d. Rubble-fillers. The rubble fillers on the previous day's loading shift prepared stacks (kletki) from props and sometimes from discarded lumber to fill the butts. Stacks were made in the following shape.



The stacks were placed in the lower corner of each butt. When the first 40 m. of the coal face and the equivalent section of rock was blasted, the rubble fillers attached to the next loading shift filled the butts with rocks. The work was done with spades. Large rocks, however, were moved by hand.

e. The lumber transporters functioned as described above /Paragraph 25, e/.

f. Crosscut entries called pechka were made by entry drivers every 50 m. on Coal Faces 3 and 4. These entries were used as emergency exits and for ventilation purposes. Equipment used by entry drivers were battering rams (baranchik), spades, and axes. The entry drivers also filled the upper butt on all faces and made the prop wall between the upper butt, called bufet, and the entry. /See Annex I./

g. Work was performed by the hole man and the electrician as described above /Paragraph 25, h and i/.

27. The organization of the entry opening section (otdel kapital'nogo remonta) was as follows:

a. Personnel in Charge: One mining technician, section chief; three technicians, assistant chiefs, one per shift; three foremen (desyatnik), one per shift.

b. Workers. Approximately 130 workers were assigned to this section. They were organized in the following way:

(1) Eight gangs of entry drivers (prokhodchik). Each gang was composed of 10 or 11 men.

(2) Two gangs of timber-men, for maintenance purposes (po remontu krepleniya). A gang was composed of six or seven men.

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(3) Two gangs of putters (otkatchik). There were five or six workers to a gang; usually some were women.

(4) Two gangs of electricians (elektroslesar') of three men each. One gang was assigned to the western wing, one to the eastern wing.

(5) Two gangs of hole men (zapal'shchik or podryvnik) of three men each. One gang was assigned to the western wing, one to the eastern.

(6) One emergency gang composed of an electrical technician and three or four skilled electricians.

c. The entry opening section was responsible for the extension and maintenance of the main entry, of the entry at the 105 horizontal, the 105th entry, and the first and second subentries.

d. The entry driving gangs working in the main entries were attached to gangs of putters (one for the west wing and one for the east) whose job was to pull out cars loaded with rock, to maintain supply of props, timber, boards, rails, and to perform various odd jobs for the entry driving gangs.

e. The entry driving gangs used core drilling machines for their work and, in addition, in the main and 105th entries rock loading machines (porodopogruzochnaya mashina) similar to small excavators.

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28. The organization of the underground transport section (Uchastok vnutri shakhtnogo transporta-VShT), to which about 200 workers were assigned, was as follows:

a. Personnel in Charge:

(1) One technician, section chief.

(2) Three mining technicians, assistant section chiefs (one per shift).

(3) Three foremen (one per shift).

(4) Three dispatchers (dispetcher) (one per shift).

(5) One electro-technician.

b. Equipment and Workers:

(1) The section was assigned five or six trolley locomotives with a capacity of 10 tn. which operated in the main and miner's entries. In addition, there was a trolley locomotive of 1½-tons' capacity used at the entry at the 105th horizontal and the 105th entry. The large locomotives were operated by one engineer and one conductor. The small locomotive was operated by one man.

(2) Approximately 300 to 350 cars of 1½ tons' capacity were assigned to the section.

(3) Two elevators operating in shafts were maintained for this section. The operators were called

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shaft men (stvolovyye). There were two operators working on each shift (one for each shaft), one at the 105th horizontal, where there was a winch lorry for delivering timber /Paragraph 21-c/, and three on the surface.

(4) The tipper /Paragraph 21-a/ was also operated by this section. It was serviced by six or seven women for each shift, in addition to one woman checker.

(5) Two skip hoists /Paragraph 21-a/ operated electrically by push buttons were run by one man (skipovoy) per shift. The skip hoists carried coal from the bunker to the surface and then to the coal washing and cleaning shop.

(6) One repair man per shift for electrical equipment.

(7) One emergency crew made up of one electro-technician and three to five skilled repair men for electrical equipment. This crew, used in emergencies only, was kept in a constant state of readiness.

(8) Two gangs of repair men for rail lines.

29. [redacted] in February and March 1951 a new coal machine known as a coal combine (ugol'nyy kombayn) was tested in the Yuzhnaya Mine on Face No. 1. This was supposed to be a universal coal-cutting, scraping, loading, and transporting machine. The machine was called, when mentioned to me, something like NVD. [redacted] it was approximately 2½ m. long, probably .8 m. wide, and in appearance was similar to a coal-cutting machine. 25X1 25X1

30. In general the morale of the miners in the Yuzhnaya Mine was low because of the hard, dangerous work. The relatively high wages paid to miners did not alleviate this situation. The miners received no food rations. Food rationing was abolished in the USSR in 1947 and since that time consumer goods and food have been sold on a free market.

31. Production quotas were never posted on the bulletin board. They were not known to miners unless some friend working in the administrative office gave the information privately. 25X1

32. Approximately 55 to 60 freight cars (30 tn. capacity) were loaded daily with coal from the Yuzhnaya Mine and were transported to some unknown destination.

33. [redacted]

34. Miners could buy coal at the Yuzhnaya Mine for 40 rubles per ton. Purchase price included loading, delivery to the home of the purchaser in trucks owned by the mine, and unloading there. [redacted] 25X1

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Annex A. Location Sketch Mine Yuzhnaya

Annex B. Surface Plan Yuzhnaya Mine

Annex C. Cross Section Yuzhnaya Mine

Annex D. Underground Plan Yuzhnaya Mine

Annex E. Coal Chute

Annex F. Baranchik (Battering Ram)

Annex G. Coal Face Timbering Method. (Cut A-B Annex C)

Annex H. Scraper - Conveyer

Annex I. Building of Bufet (Plan) Working Coal Face.

Annex J. Building of Bufet (Cut A-B)

Annex K. Electric Locomotive of 1.5 Ton

Annex L. Coal Cutter

Annex M. Winch for the Coal Cutter.

Annex N. Hatchway.

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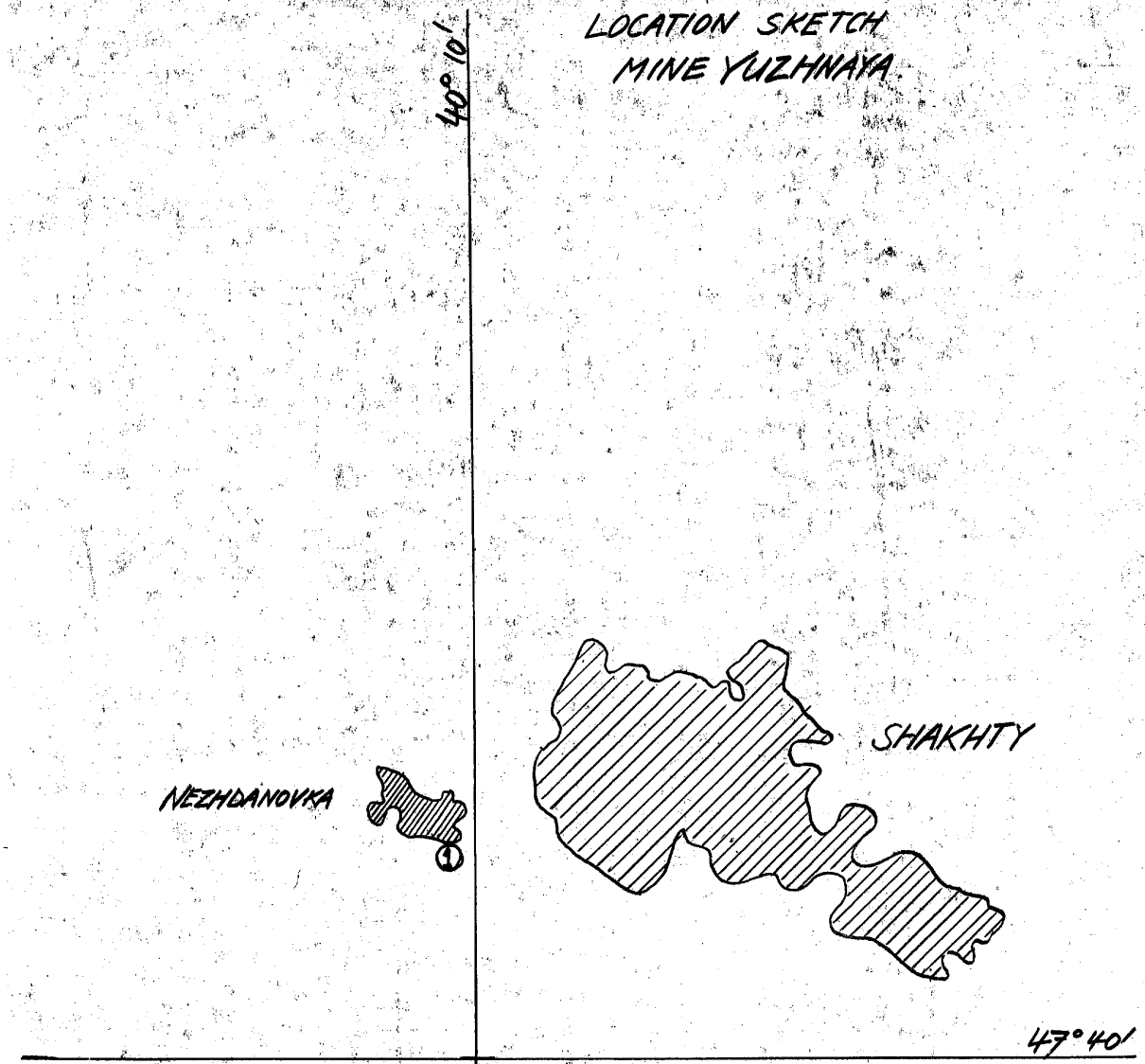
ANNEX A.

LOCATION SKETCH MINE YUZHNAYA



LEGEND:

(1) COAL MINE YUZHNAYA

MAP 0249 – 9961 – 100
2ND EDITION MAY 1952.

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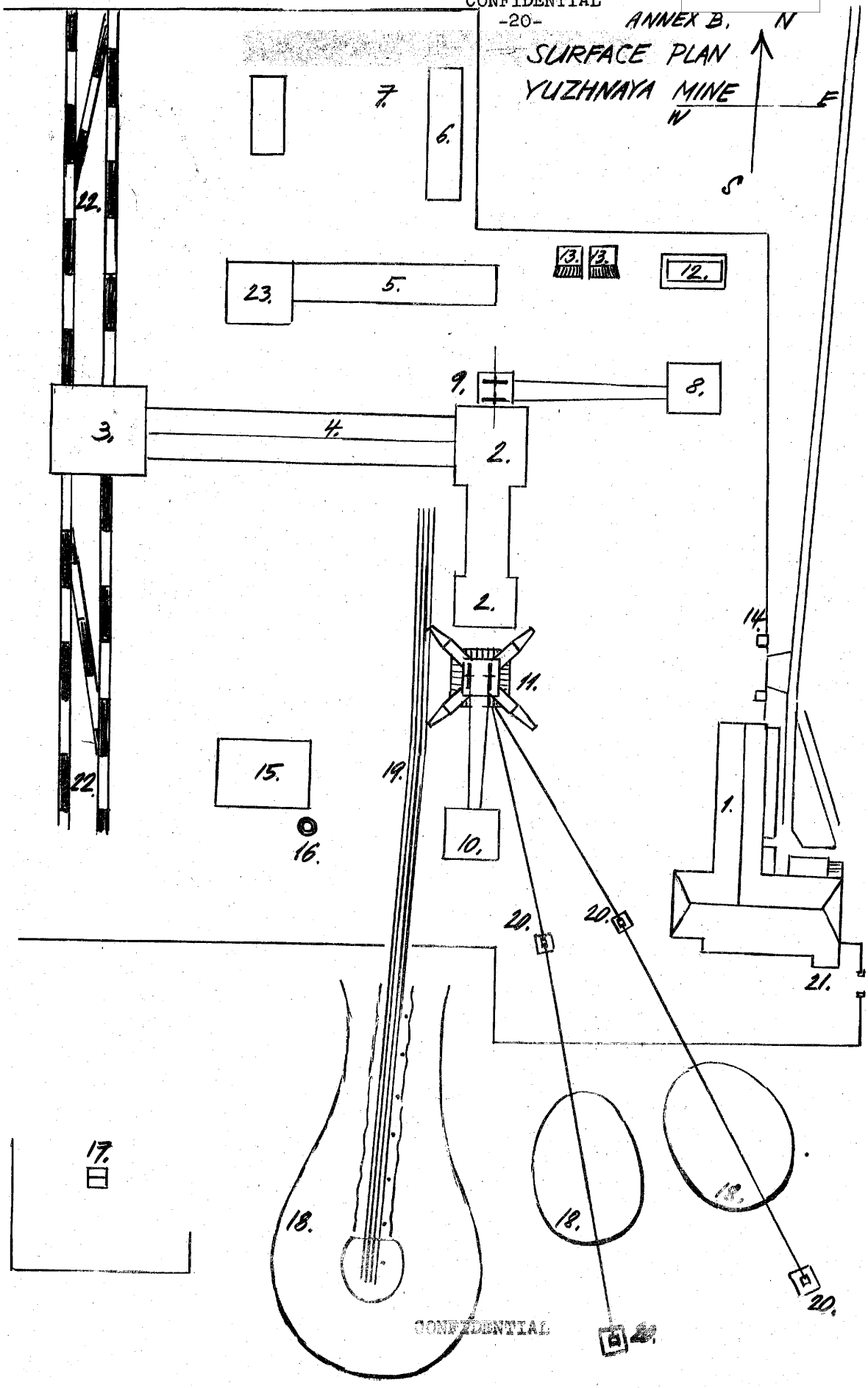
ANNEX B.

SURFACE PLAN
YUZHNAYA MINE



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Annex B (Cont'd) LEGEND

Point # 1. Administration building and shower room.

2. Coal washing and grading shop (fabrika).

3. Coal hopper.

4. Elevator for transporting coal into hopper.

5. Mechanical repair shops.

6. Carpenter shop.

7. Timber storage.

8. Machinery for coal elevator operation.

9. Coal shaft.

10. Machinery for klet'yevoy elevator operation.

11. Klet'yevoy shaft.

12. Transformer room.

13. Ventilation pipes.

14. Main entrance.

15. Boiler for the shower room.

16. Boiler room chimney.

17. Timber pit for the 105th entry.

18. Rock dump (terrikonik).

19. Narrow gauge double track RR line to the rock dump.

20. Cable-car line to the rock dump.

21. First-aid room.

22. Normal gauge RR line.

23. Warehouses and supply rooms.

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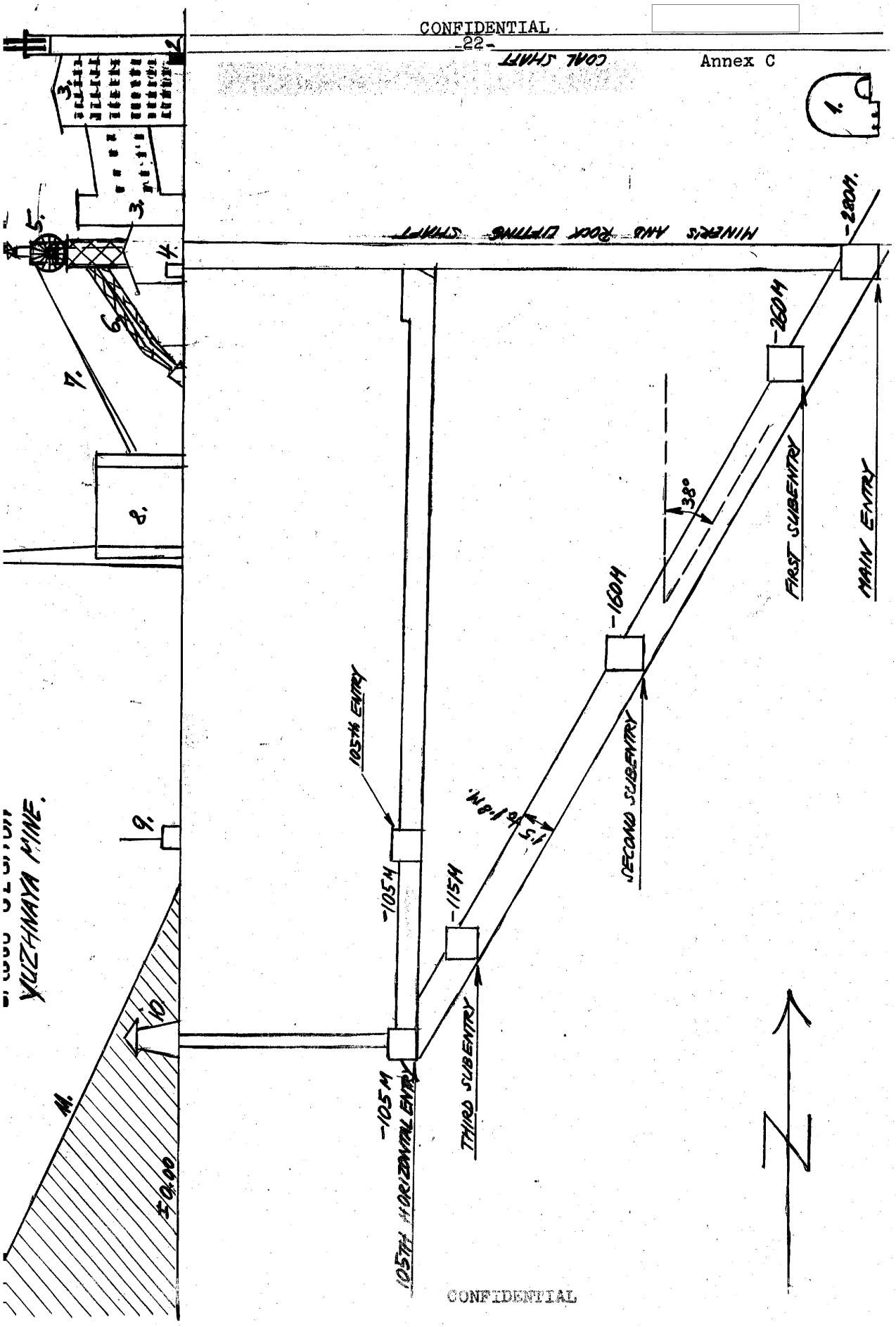

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Annex C (Cont'd)

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LEGEND

Point # 1. Tipper.

2. Coal shaft headframe.

3. Coal washing and grading shop (fabrika).

4. Shaft building.

5. Headframe and gears.

6. Headframe supporting pillars.

7. Steel ropes of the cage.

8. Elevator building.

9. Fence surrounding grounds.

10. Lumber pit.

11. Rock dump.

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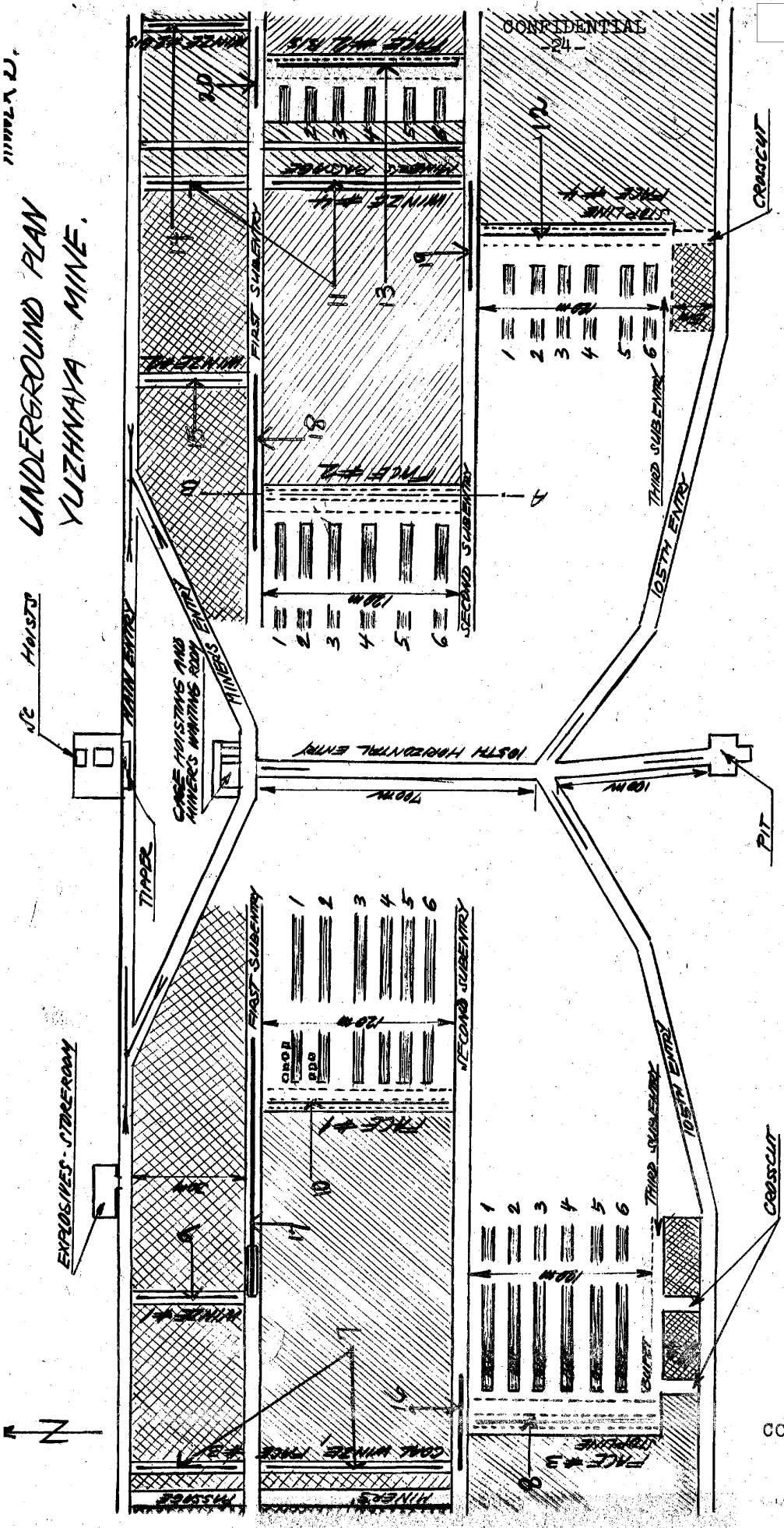
Annex D

UNDERGROUND PLAN YUZHNAYA MINE.



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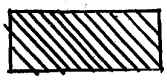
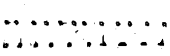
LEGEND

Coal block.



Coal face in work

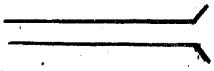
1,2,3,4,5,6. Stone Blocks



Timbering.

7,8,9,10,11,
12,13,14,15. Chutes

16,17,18,19,20. Belt and Scraper Conveyer.



Winze and hatchway.

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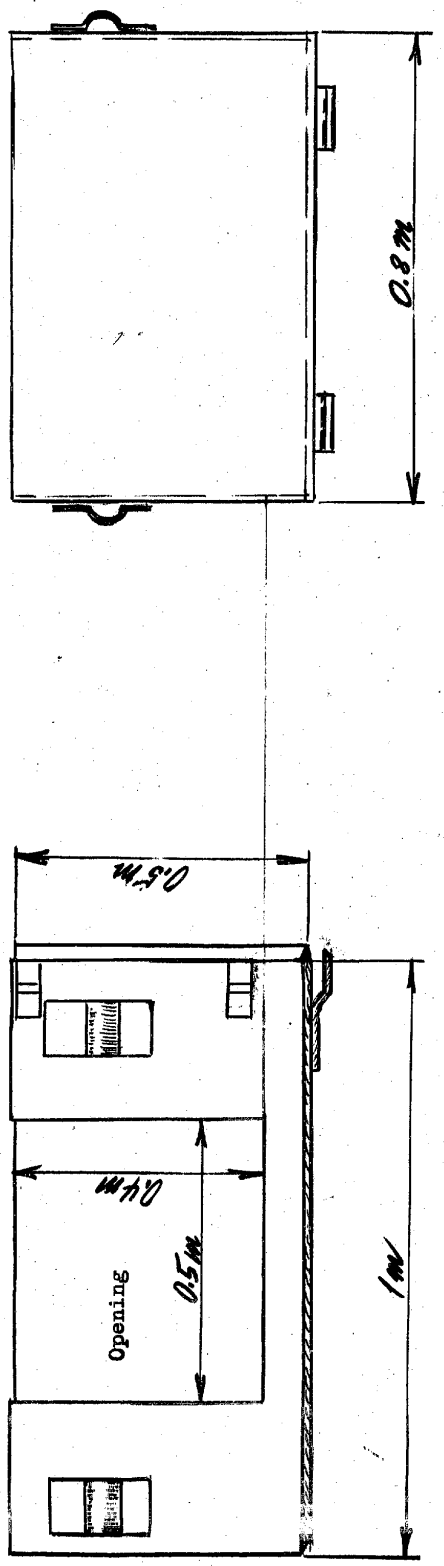
Annex E

COAL CHUTE.



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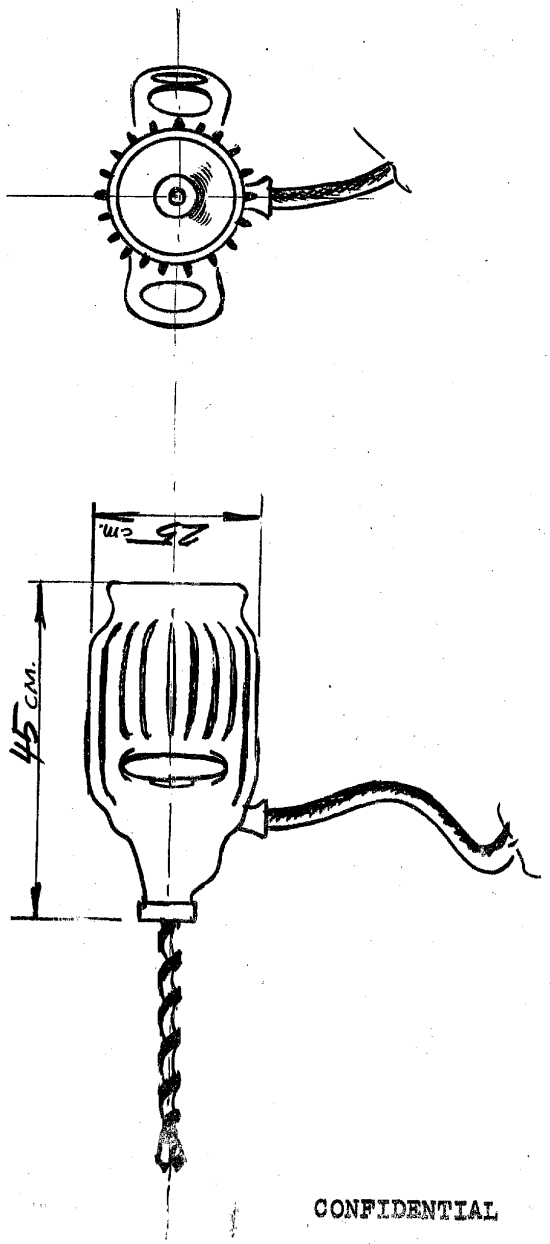
Annex F

ANNEX F.

UNCODED

BARANCHIK
(BATTERING RAM)



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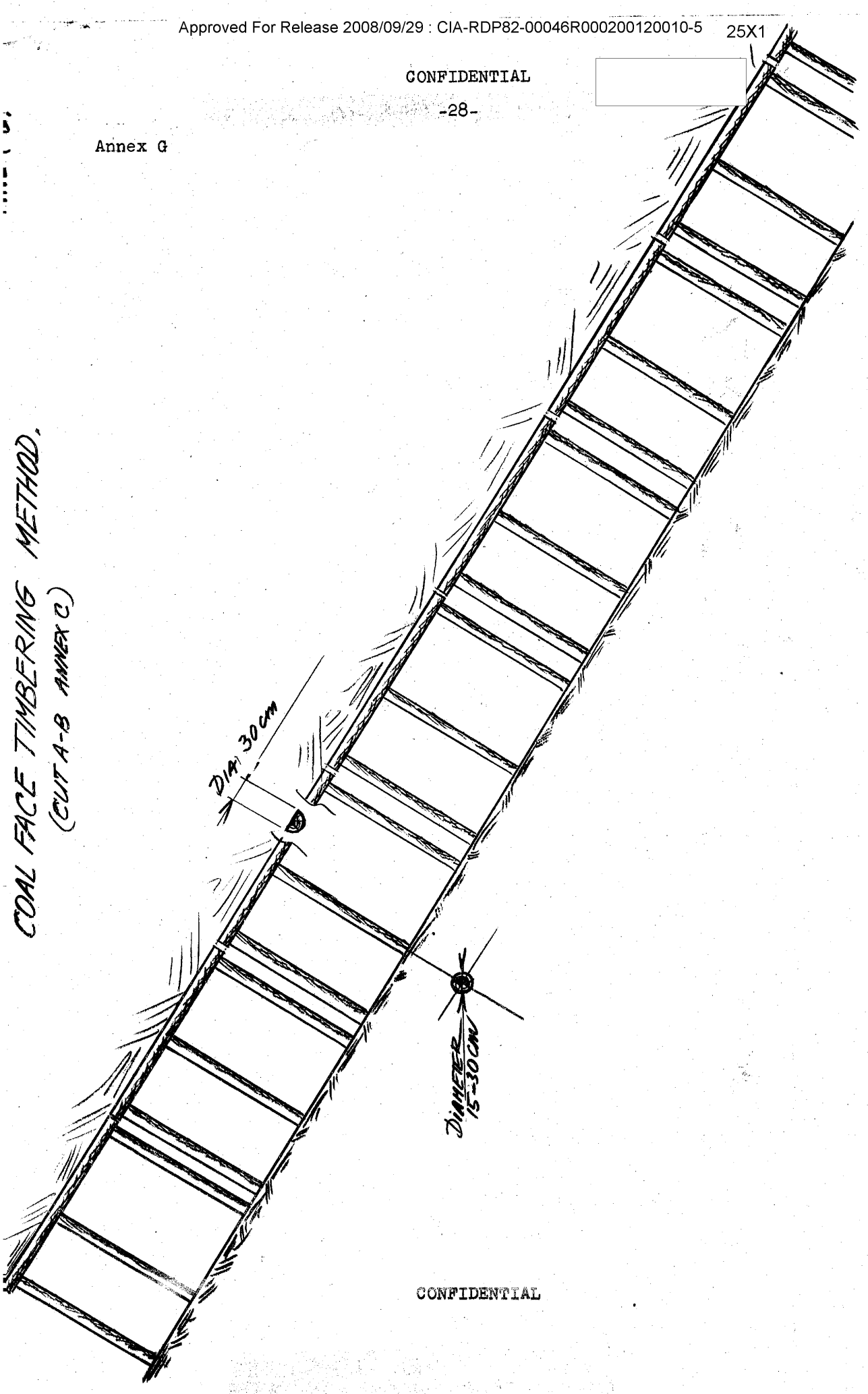
Annex G

COAL FACE TIMBERING METHOD.
(CUT A-B ANNEX C)



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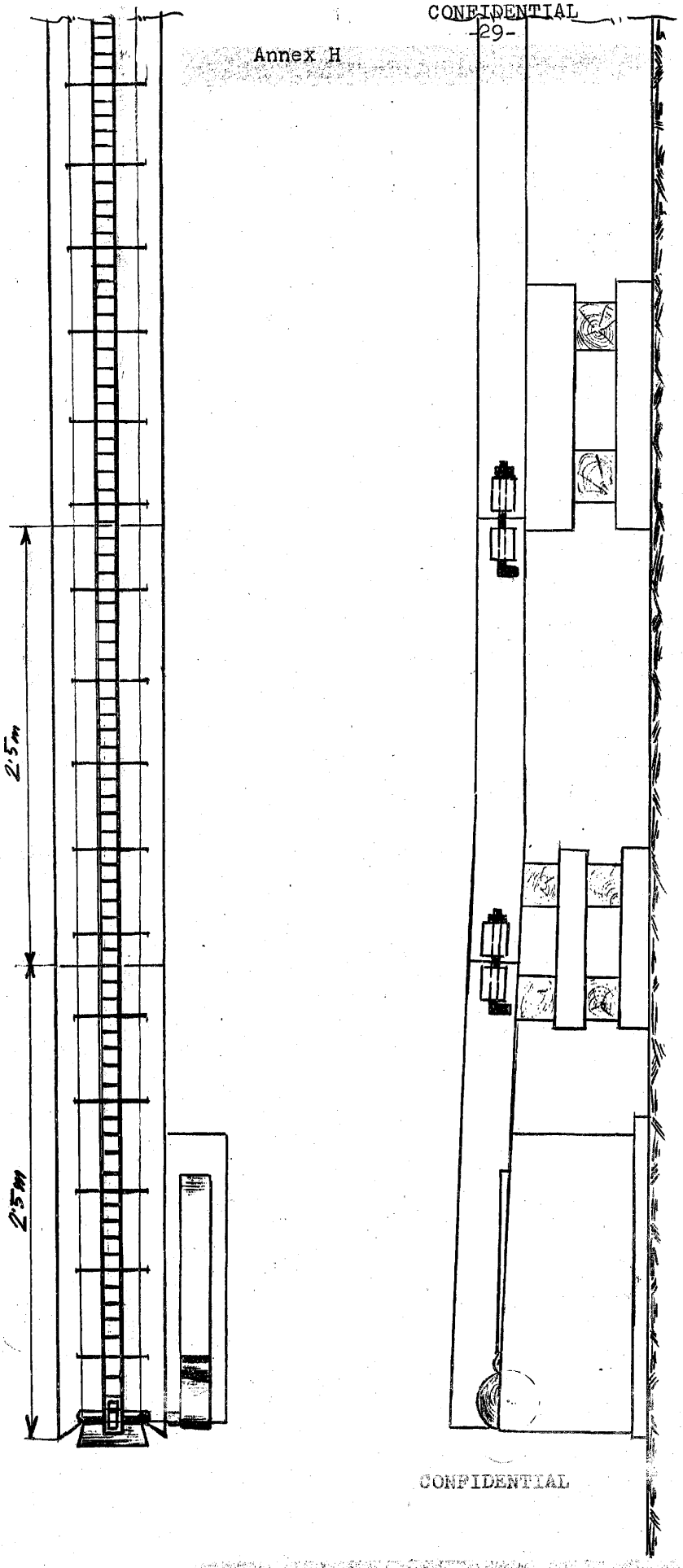
Annex H



SCRAPER - CONVEYER.

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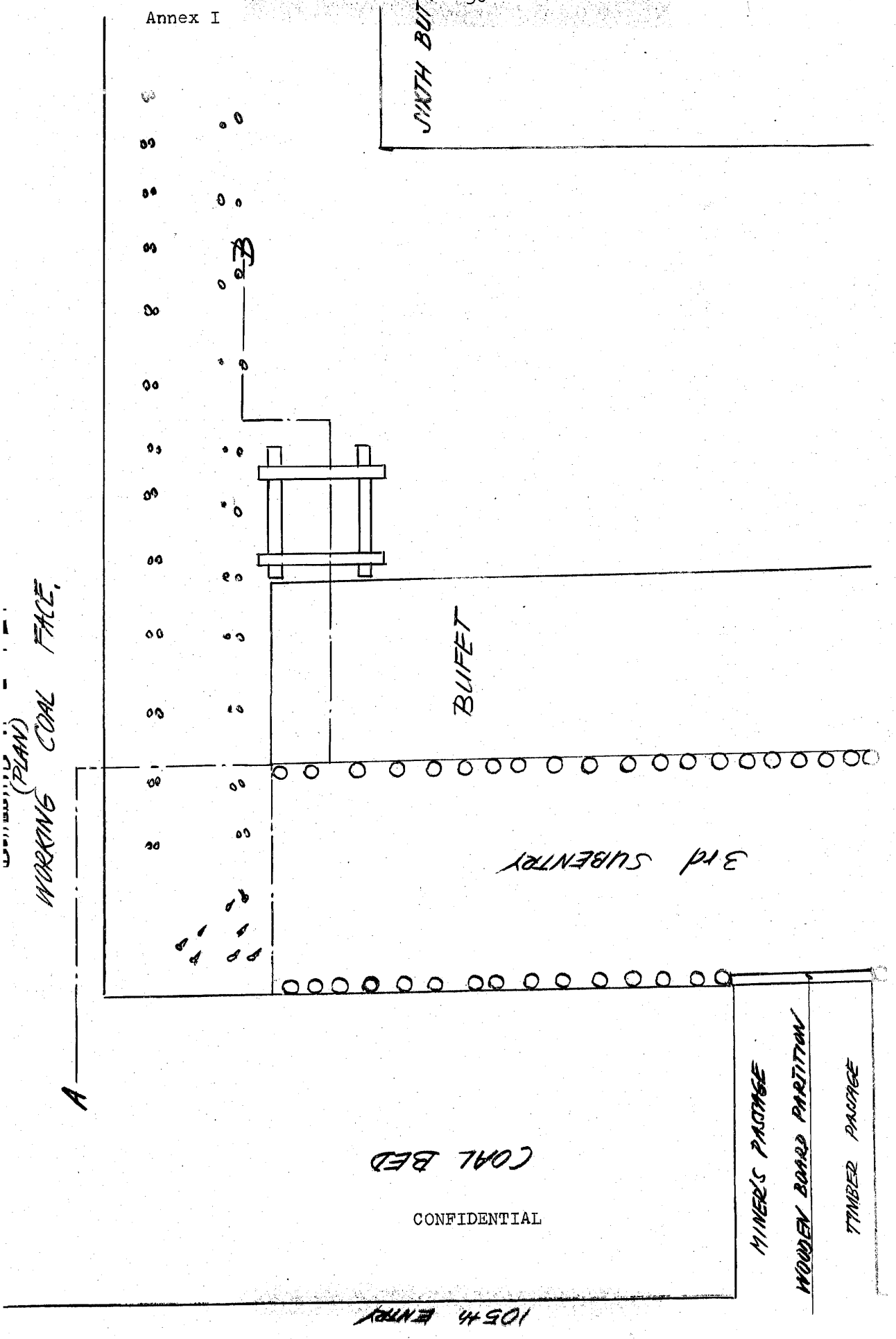
Annex I



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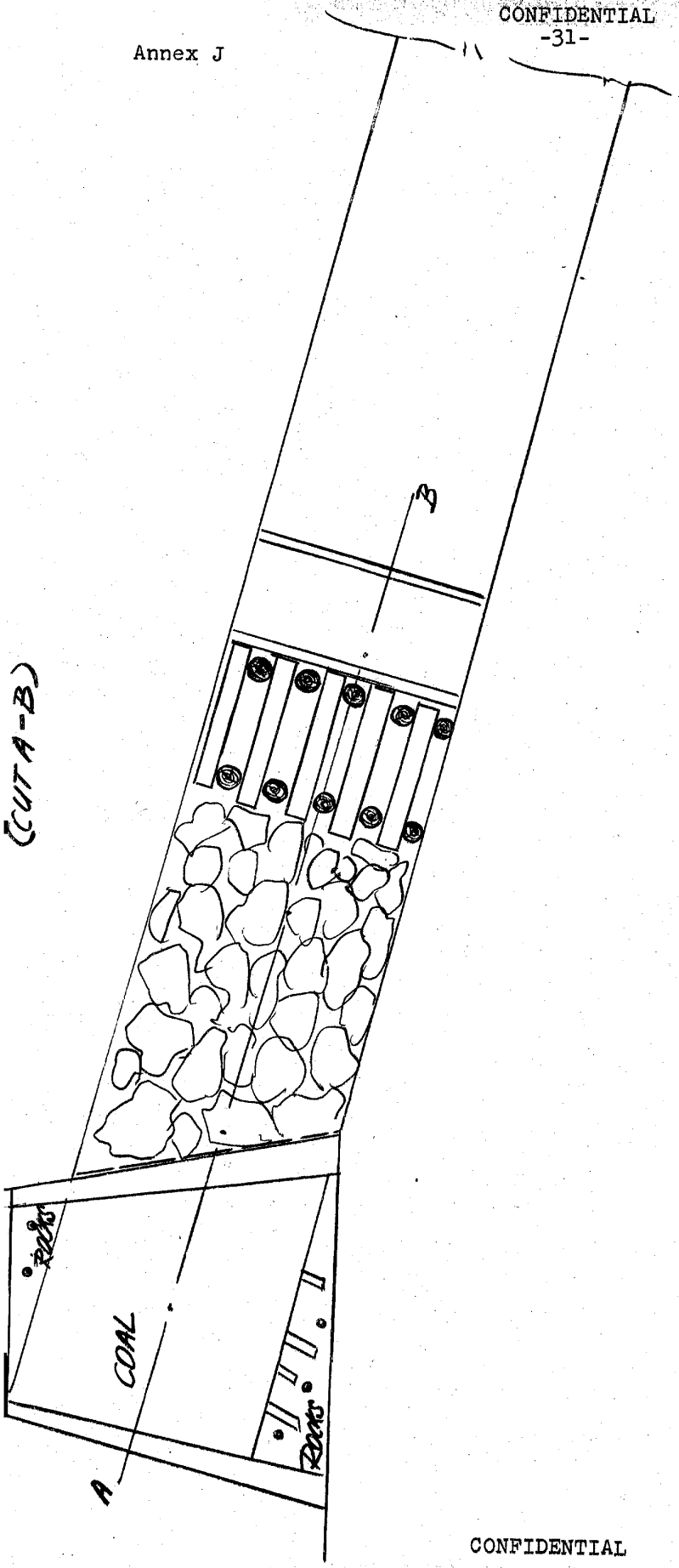
Annex J



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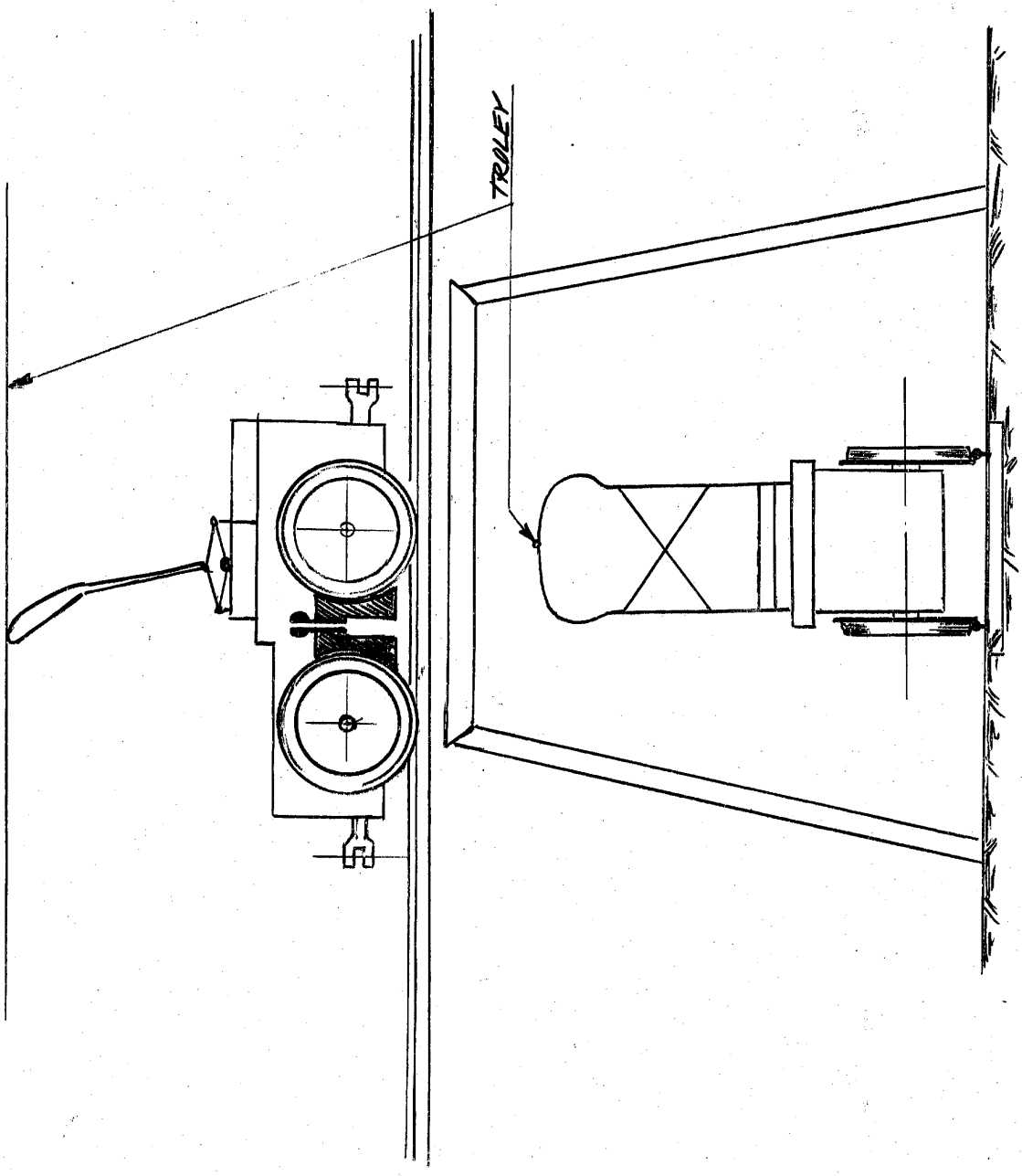
Annex K



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ANNEX L.

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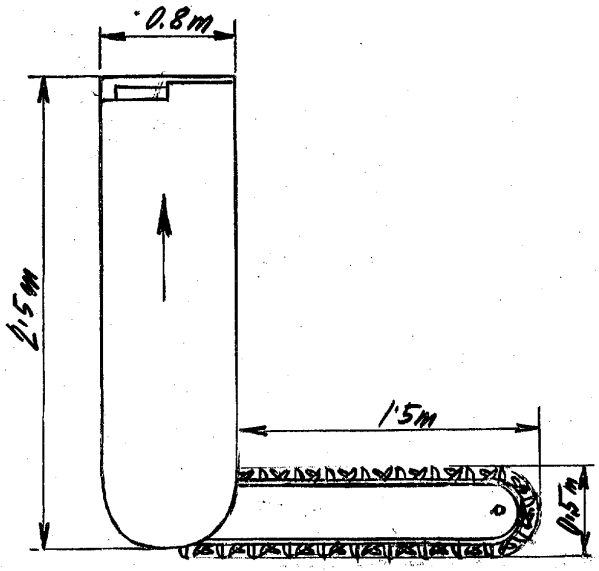
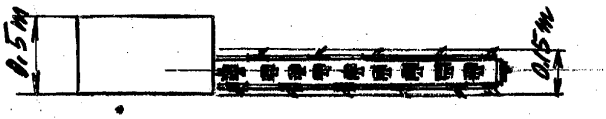
Annex L.

COAL CUTTER.





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ANNEX M.

Annex M

WINCH FOR THE COAL CUTTER.

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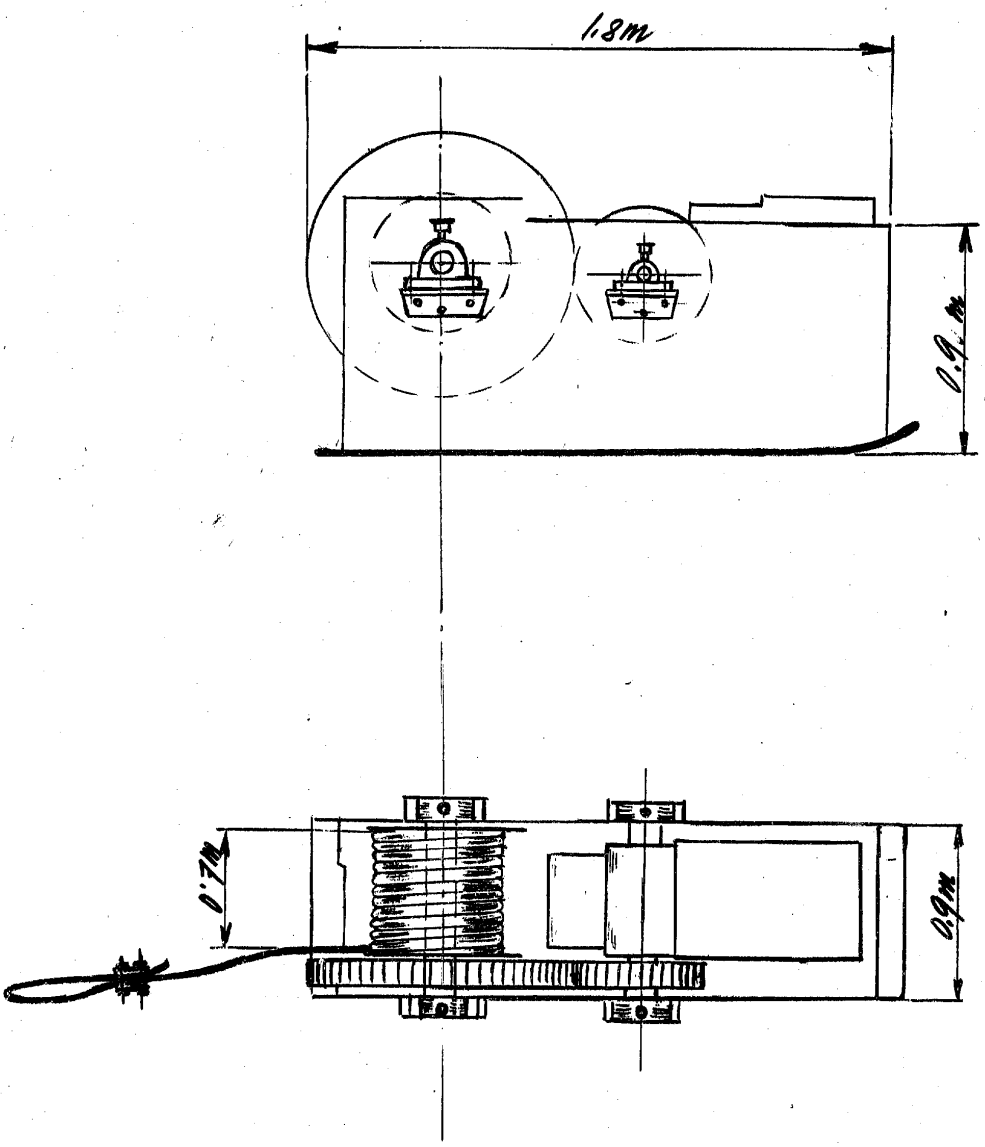

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Annex N

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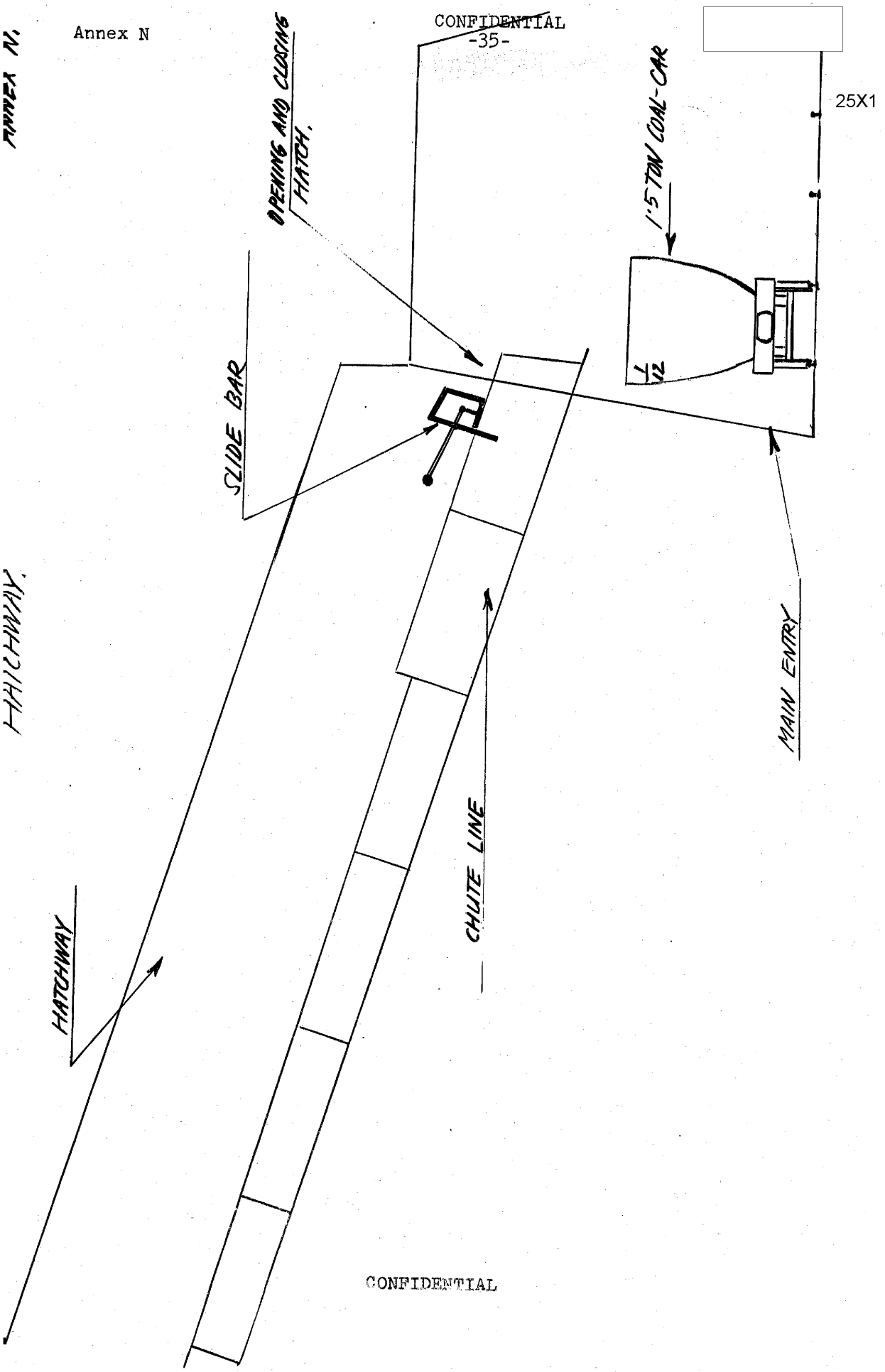

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